AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

1. (Amended) In a ~~A leak test~~ calibration arrangement for use with a test system for detecting leaks in devices, ~~the calibration~~ a combination comprising:

a test ~~device~~ apparatus comprising apparatus for testing the fluid properties of a fluid in a testing conduit connected to the device;

a reference source cell comprising a substantially sealed fixed volume and having an outlet conduit in fluid communication with the testing conduit; and

a control apparatus for controlling the temperature of the reference source cell volume ~~the fluid properties of a fluid in the reference cell.~~ to produce a controlled fluid inflow or fluid outflow with the testing conduit.

2. (Canceled)

3. (Canceled)

4. (Amended) The ~~calibration system~~ combination of claim ~~2~~ 1 wherein the control apparatus comprises circuitry for controlling the temperature of the fluid in the reference source cell.

5. (Amended) The ~~calibration system~~ combination of claim ~~4~~ 1 comprising a temperature measurement device for measuring the temperature of the fluid in the reference source cell and wherein the ~~circuitry~~ control apparatus comprises apparatus for comparing the measured temperature with a reference value.

6. (Amended) The ~~calibration system~~ combination of claim 5 wherein the reference value varies with time in accordance with a predetermined function.

7. (Amended) The ~~calibration system~~ combination of claim ~~4~~ 1 wherein the control apparatus maintains a substantially constant fluid temperature in the reference source cell during leak testing of a device.

8. (Amended) The ~~calibration system~~ combination of claim 5 comprising apparatus for generating a pressure signal responsive to the pressure in the testing conduit.

9. (Amended) The ~~calibration system~~ combination of claim 8 wherein the control apparatus responds to the pressure signal for controlling the temperature of the fluid in the reference source cell.

10. (Amended) The ~~calibration system~~ combination of claim 9 wherein the controller responds inversely to the pressure signal for controlling a rate-of-change of the temperature of the fluid in the reference source cell.

11. (Amended) The ~~calibration system~~ combination of claim ~~3~~ 1 wherein the reference source cell comprises a plurality of heat conductive plates defining a plurality of sub volumes within the fluid volume of the reference source cell.

12. (Amended) The ~~calibration system~~ combination of claim 11 wherein each of the sub volumes is in fluid communication with at least one other of the sub volumes.

13. (Amended) The ~~calibration system~~ combination of claim ~~4~~ 5 wherein the control apparatus comprises a comparator for comparing the measured temperature with the reference value.

14. (Amended) The ~~calibration system~~ combination of claim 13 wherein the comparator is an analog comparator.

15. (Amended) The ~~calibration system~~ combination of claim 6 comprising an analog integrator for generating the time varying reference value.

16. (Amended) The ~~calibration system~~ combination of claim 15 comprising circuitry for applying an analog input reference to the analog integrator.

17. (Amended) The ~~calibration system~~ combination of claim 16 comprising a standard reference value identifying a desired fluid property.

18. (Amended) The ~~calibration system~~ combination of claim 17 comprising reference control apparatus for converting the standard reference value into the analog input reference.

19. (Amended) The ~~calibration system~~ combination of claim 18 comprising apparatus for generating a pressure signal responsive to the pressure in the testing conduit and the reference control apparatus responds to the pressure signal for converting the standard reference value into the analog input reference value.

20. (Amended) The ~~calibration system~~ combination of claim 19 wherein the control apparatus responds inversely to the pressure signal.

21. (Withdrawn) A reference source cell for producing predetermined characteristics in a fluid comprising:

a substantially sealed volume having a fluid outlet;

temperature affecting apparatus for changing the temperature of a fluid in the sealed volume;

a control arrangement for receiving an input signal indicating a predetermined characteristic of the fluid and for controlling the temperature affecting apparatus to achieve the predetermined characteristic by selectively heating and cooling the fluid in the sealed volume.

22. (Withdrawn) The reference cell of claim 21 wherein the sealed volume comprises a heat exchanger.

23. (Withdrawn) The reference cell of claim 22 wherein the temperature affecting apparatus comprises at least one thermo-electric device.

24. (Withdrawn) The reference cell of claim 23 wherein the control arrangement couples a temperature controlling electrical signal to the thermo-electric device.

25. (Withdrawn) The reference source cell of claim 24 comprising a temperature sensing apparatus in the substantially sealed volume and the control arrangement responds to temperature representing electrical signals from the temperature sensing apparatus to modify the temperature controlling electrical signal.

26. (Withdrawn) The reference source cell of claim 25 comprising pressure sensing apparatus in fluid communication with the sealed volume.

27. (Withdrawn) The reference source cell of claim 26 the pressure sensing apparatus generates pressure representing electrical signals and the control arrangement responds to the pressure representing electrical signals to the control the temperature controlling signals.

28. (Withdrawn) The reference cell of claim 22 wherein the heat exchanger comprises a plurality of heat conductive plates.

29. (New) A combination according to claim 1 to perform down side leak detection wherein the device is enclosed in a sealed container and the testing conduit provides fluid communication between the sealed container and the test apparatus.

30. (New) A combination according to claim 1 to perform up side leak detection wherein the testing conduit provides fluid communication between the device and the test apparatus.

31. (New) A combination according to claim 1 wherein the reference source cell comprises a thermoelectric transducer for use in controlling the temperature of the reference source cell.

32. (New) A combination according to claim 5 wherein the temperature measurement device comprises an electrical transducer.

33. (New) A combination according to claim 5 wherein the control apparatus comprises circuitry for continuously comparing the measured temperature to the reference valve.

34. (New) A combination according to claim 1 comprising apparatus responsive to the fluid inflow and fluid outflow to adjust portions of the test apparatus.

35. (New) A combination according to claim 1 comprising apparatus responsive to the fluid inflow and fluid outflow to validate the operation of portions of the test apparatus.